

We claim:

1. A lighted handle comprising:
  - a hollow mounting bracket having a recess;
  - a light transmitting bar having a first end portion telescoped in said recess, said first end portion having a central length axis and an end face;
  - a light emitting unit disposed in said recess, said light emitting unit being fixed with respect to said bracket and bar, and having a central emitted light beam axis extending endwise into said bar, said light emitting unit's emitted light beam axis being parallel to, but spaced from said bar axis.
2. The apparatus of Claim 1 in which said recess comprises (1) a relatively larger diameter outboard portion receiving said bar end portion and (2) a relatively smaller diameter inboard portion receiving said light emitting unit.
3. The apparatus of Claim 1 in which said recess outboard and inboard portions have longitudinal axes which are parallel but radially spaced.
4. The apparatus of Claim 1 in which said bracket comprises a foot having a mounting surface, a leg curving from said foot and having a free end portion spaced from said foot and from the plane of said mounting surface, said leg free end portion being hollow and indented by said recess, said bar and bracket having adjacent outer peripheral surfaces which are mutually flush, such that said bar continues the peripheral contour of said bracket in a visually unbroken manner.

5. A lighted handle comprising:  
a hollow mounting structure having a recess;  
a light transmitting bar having one portion of a first relatively larger thickness, and an end portion of a second relatively smaller thickness extending from said one portion and having a substantially planar end face, said end portion being telescoped in said recess;  
a light emitting device disposed in said recess at the inboard end of said bar, said light emitting device facing said bar end face.

6. The apparatus of Claim 5 in which said recess comprises (1) a relatively larger diameter outboard portion receiving said bar end portion and (2) a relatively smaller diameter inboard portion receiving said light emitting unit, said recess outboard and inboard portions having longitudinal axes which are parallel but radially spaced.

7. The apparatus of Claim 6 in which said recess and bar first end portion have engageable peripheral walls, at least one of which tapers, the central axes of said recess and bar fastened portion being first in one of a range of relative angular positions.

8. The apparatus of Claim 5 in which said bar comprises a plastic extrusion, said one portion being of substantially constant cross section, said end portion having a machined outer periphery.

9. The apparatus of Claim 8 in which said bar one portion has an outer peripheral surface with a user grip enhancing contour.

10. The apparatus of Claim 9 in which said contour has axially parallel, circumferentially spaced contour elements selected from the group consisting of grooves and ribs.

11. The apparatus of Claim 5 in which said bar end portion has an annular groove, and an annular seal ring bearing on an interior peripheral surface of said recess, said bar end portion being frictionally, removably, fixed in said recess.

12. The apparatus of Claim 5 including a second said bracket having a second recess, said bar having a second end portion with a second end face telescoped in said second recess;

a reflecting member in said second recess and facing said bar second end face.

13. The apparatus of Claim 12 including a spacer member in said second recess and backing said reflecting member.

14. In a bathroom installation, the combination comprising:

a person engagable bathroom fixture;

at least one hand graspable, person stabilizing handle fixed with respect to said fixture and located within reach of a person using said fixture, said handle comprising:

(1) a hand graspable, light transmitting bar having spaced ends and extending adjacent said fixture; and

(2) a relatively low voltage and low current draw light emitter, said light emitter comprising a light emitting device located adjacent to one end of said bar and having a self-focused light beam aimed into said one end of said light transmitting bar, said light emitting device having relatively low voltage and electric current supply connectable, electric conductors.

15. The apparatus of Claim 14 including a low voltage electric current supply stepped down in voltage from a conventional household electric current supply and connected in circuit with said conductors.

16. The apparatus of Claim 14 including a relatively low voltage and relatively low current supply comprising an electric storage cell and connected in circuit with said conductors, support structure fixing said bar and light emitting device and electric storage cell adjacent to each other and relative to said fixture, said support structure including a releasable cell holding member replaceably locating said cell.

17. The apparatus of Claim 16 in which said support structure comprises a bracket supporting an end of said bar.

18. The apparatus of Claim 16 in which said support structure comprises a wall to which said one bar end is fixed.

19. The apparatus of Claim 14 in which said light emitting device is a light emitting diode which has a

voltage drop across it less than 5 volts and a current flow therethrough less than 100 milliamps.

20. The apparatus of Claim 14 in which said fixture is selected from the group consisting of a toilet, a bidet, a spa, a shower stall, and a bathtub.

21. The apparatus of Claim 14 in which said handle is fixed on or adjacent said fixture.

22. The apparatus of Claim 14 in which said light transmitting bar has a peripheral surface firmly and fixedly graspable when dry and when wet.

23. The apparatus of Claim 22 in which said bar is an extrusion and said firmly graspable peripheral surface thereof comprises integrally extruded, circumferentially alternating, axially extending ribs and grooves.

24. A lighted handle, comprising:  
a hollow mounting bracket;  
a light transmitting bar having one end telescoped with respect to an opening in said mounting bracket;  
a light emitting device fixed in said hollow bracket and aimed at said one end of said light transmitting bar;  
an electric storage cell replaceably located in said hollow bracket and connected in circuit with said light emitting device.

25. The apparatus of Claim 24 in which said bracket has a cell entry/exit portal to facilitate cell replacement.

26. The apparatus of Claim 24 in which an ambient light responsive, cell conserving switch is carried by said bracket and connected in circuit with said light emitting device and cell.

27. The apparatus of Claim 24 in which said hollow bracket is sized to carry a battery pack at least as large as two commercially available AAA cells.

28. The apparatus of Claim 24 in which said light emitting device is a light emitting diode which has a light output of night vision preserving, colored hue.

29. The apparatus of Claim 28 in which said hue is selected from at least one of the red, yellow and green portions of the visible light spectrum.

30. A lighted handle, comprising:

(1) a hand graspable, light transmitting bar having spaced ends; and

(2) a light emitter located adjacent to one end of said bar and having a light beam aimed into said one end of said light transmitting bar;

(3) a low voltage electric current supply unit, of voltage lower than conventional AC household electric current, and connected in circuit with said light emitter;

(4) a housing member compactly pocketing said one end of said light transmitting bar, said light emitter, and said low voltage current supply unit.

31. The apparatus of Claim 30 in which said low voltage current supply unit comprises an electric storage

cell connected in circuit with said light emitter, said housing member including a releasable cell holding member replaceably locating said cell.

32. The apparatus of Claim 30 in which said low voltage current supply unit comprises (1) a 110 volt AC converter circuit having a substantially lower voltage direct current path through said light emitter, and (2) insulated conductors extending from said handle to a remote 110 volt AC connector device.

33. The apparatus of Claim 30 in which said housing member comprises a hollow bracket with an interior passage one end of said passage being fixed with respect to said one end of said bar, said light emitter and current supply unit being disposed in said passage.

34. The apparatus of Claim 33 in which said current supply unit comprises an electric storage cell replaceably housed in said passage.

35. The apparatus of Claim 33 in which said current supply unit comprises an AC-to-DC converter in said passage and insulated AC conductors running from said passage and out of said handle.

36. The apparatus of Claim 30 in which said housing member comprises a wall defining a recess in which said bar is located, said wall having a hole through which said bar extends, said wall having a portal closure openable to access an area behind said wall, said cell being releaseably supported in said area.

37. The apparatus of Claim 30 in which said low voltage current supply unit comprises a replaceable battery pack and said light emitter is of a type:

(a) which is self-focused in a relatively narrow light beam wherein the light output on its central axis is reduced to half at an angle more than  $45^\circ$  off that axis, such that substantially all of its light output is applied to the opposed end of said light transmitting bar,

(b) having its rated light output at an electric current level substantially less than 100 milliamps,

(c) having at least dim light output at electric current levels as low as about 100 microamps,

(d) having an internal resistance which rapidly, nonlinearly increases as the voltage applied across it decreases,

(e) having an internal resistance which increases as current flow through it decreases, so as to maximize the time period between battery pack replacements while still producing useful levels of light.

38. The apparatus of Claim 30 in which said light emitter comprises an LED.

39. A lighted handle, comprising:

a light transmitting bar having a fixedly mountable end portion having an end face, and a recess in said end face;

a light emitting device fixedly located in said recess and having a light beam emitting end aimed longitudinally of said light transmitting bar.



40. The apparatus of Claim 39 including an illumination unit snugly received in said recess and carrying said light emitting device.

41. The apparatus of Claim 39 in which said recess is sized to snugly receive at least the light beam emitting end of said light emitting device.

42. The apparatus of Claim 39 in which said light emitting device is an LED-like device.

43. The apparatus of Claim 42 in which said LED-like device is an LED.